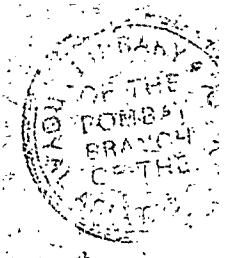
DEPARTMENT OF INDUSTRIES

BOMBAY PRESIDENCY.

ANNUAL REPORT

1932-33



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CONTENTS

PAGE.

CHAPTER I—General Industrial Outlook during the year.

(1) State of existing industries 1
(2) New Industries 8
(3) New Flotations 10

CHAPTER II—Work of the Department—Organised Industries.

(1) Practical investigations, experiments and demonstration work to improve the quality and quantity of Products of existing industries—
(*a*) The real Gold thread industry 11
(*b*) Refining of Natural soda 13
(*c*) Improvement in indigenous soap industry 13

(2) Practical investigations, experiments and demonstrations for possible new industries—
(*a*) Tallow substitute 13
(*b*) Peppermint oil 14
(*c*) Straw Boards 14
(*d*) Starch from Jowar 14
(*e*) Saponin 14
(*f*) Thorium Nitrate 15
(*g*) Alum and Aluminium Sulphate 15
(*h*) Strychnine 15
(*i*) Starch from Kachora 15

(3) Representations to the Tariff Board 16
(4) Preparation of Estimates—
(*a*) Handloom Factory 16
(*b*) Electric lamps 16
(*c*) Small grinding mills 17
(*d*) Woollen Hosiery manufacture 17
(*e*) Synthetic Resin—(Bakelite) manufacture 17

(5) Solving of practical difficulties in the processes of manufacture and rendering of Technical advice 17
(6) General assistance to industries 19
(7) Commercial and Industrial Intelligence 20
(8) Mines and minerals 20
(9) Fishing Industry 21
(10) State-aid to Industries 21

PAGE.

CHAPTER III—Work of the Department—Cottage Industries.

(1) Practical Demonstrations of improved appliances and processes in weaving, dyeing and calico printing 21
(2) Hand Weaving Institute, Poona 26
(3) Improvement in Hand Weaving appliances 26
(4) Miscellaneous activities of the weaving section 26
(5) Investigations covering cottage industries—
(a) Condition of hand weavers 27
(b) Glass bangle making as cottage industry 27

CHAPTER IV—Technical and Industrial Education.

(1) Committee of Direction for Technical Education and the schools under it 28
(2) Victoria Jubilee Technical Institute 29
(3) Government Technical Institutes controlled by the Department of Industries—
(a) R. C. Technical Institute, Ahmedabad 31
(b) Technical School, Ahwa 31
(4) Scholarships 32
(5) Miscellaneous work 33

CHAPTER V—Miscellaneous work of the Department.

(1) Work for other Departments of Government 34
(2) Acts, Legislative measures etc. 34
(3) Miscellaneous activities of the Director and the Technical Staff .. 35
(4) Exhibitions 35
(5) Library 35

CHAPTER VI—Conclusion.

(1) Staff 35
(2) Touring 36
(3) Visits to works 36
(4) Expenditure 36
(5) Conclusion 36

CHAPTER I

GENERAL INDUSTRIAL OUTLOOK DURING THE YEAR

The commercial and industrial depression mentioned in the opening paragraph of last year's Report continued and became more acute. India's trade along with that of other countries declined further. The commodity prices continued to decline. The most outstanding feature of the year was the very low prices of all agricultural produce prevailing throughout the Presidency proper and Sind. The slump in prices which set in by about May 1930 continued during the year. The purchasing power of the agriculturists, therefore, continued to be very restricted during the year.

STATE OF SOME OF THE MORE IMPORTANT EXISTING INDUSTRIES

2. **Cotton Textile Industry.**—The condition of the industry during the year under review was far from satisfactory. The difficulties experienced by the industry during the previous years became more acute and the general position became worse. Japanese competition was extremely severe due to the continuous depreciation of Yen. Bombay Island in particular as well as mill centres in the Presidency had during the year some mills shut down temporarily due to accumulation of large stocks on account of adverse market conditions.

Up to the time of writing, 32 Annual Reports of cotton mills for 1932 working in the City and Island of Bombay have been received. These reports disclose the following position :—

Seventeen mills show a loss of Rs. 38,73,756, fifteen mills show a gross profit of Rs. 22,71,474 ; out of these only six mills whose net profits amounted to Rs. 5,39,000 were able to declare a dividend. Even out of these six, two had to draw dividend equalisation fund. The rest had either to credit the profit to wipe off losses sustained in previous years, or to the depreciation of machinery, building etc. fund.

The Annual Reports of Ahmedabad Mills are issued in the latter part of the year. Hence no reports have so far been received for the year 1932.

The Annual Reports of working of the various mills received in this office disclose the fact that the condition as a whole of the textile industry in this Presidency was far from satisfactory during the year.

The question of further protection to the Textile Industry was enquired into by the Tariff Board during the year. The successive increases in the tariff on piece-goods are shown in the following statement :—

	British.	*Non-British.*
January 1930	.. 15 per cent. ad valorem or 3½ as. per lb. whichever is higher.	20 per cent. ad valorem or 3½ as. per lb. whichever is higher.
January 1931	.. 20 per cent. ad valorem or 3½ as. per lb. whichever is higher.	25 per cent. ad valorem or 3½ as. per lb. whichever is higher.
January 1932	.. 25 per cent. ad valorem or 4⅜ as. per lb. whichever is higher.	31¼ per cent. ad valorem or 4⅜ as. per lb. whichever is higher.
30th August 1932	.. 25 per cent. ad valorem or 4⅜ as. per lb. whichever is higher.	50 per cent. ad valorem or 5¼ as. per lb. whichever is higher.

During the writing of the Report (June 1933) Government have again sanctioned a further increase of duty on textile goods to enable the industry to meet the extremely severe Japanese competition. The present rates of duty are :—

British.	*Non-British.*
25 per cent. ad valorem or 4⅜ as. per lb. whichever is higher.	75 per cent. ad valorem or 6¼ as. per lb. whichever is higher.

The following statistical tables covering cotton mills in the Bombay Presidency will be of interest :—

For the year ending 31st August	Number of mills	Number of spindles	Number of looms	Average number of hands employed daily	Cotton consumed	Paid-up capital
					Cwts.	Rs.
1930 ..	220	6,172,792	135,808	252,488	5,511,184	23,92,02,145
1931 ..	218	6,290,233	138,153	250,357	5,470,906	24,01,66,075
1932 ..	220	6,443,519	141,241	256,200	5,984,720	24,58,20,563
Percentage increase or decrease as compared to 1931.	..	+ 2·4	+ 2·2	+ 2·3	+ 9·4	....

Production in and Imports of Yarn and Piece-goods into Bombay Presidency.

Year ending 31st March	Yarn (in million pounds)			Piece-goods (in million yards)		
	Presidency production	Imports into the Presidency	Percentage of imports to production	Presidency production	Imports into the Presidency	Percentage of imports to production
1929–30	467	19	4·1	1,725	789	45·7
1930–31	476	9·9	2·1	1,830	347	18·9
1931–32	549	12·3	2·2	2,188	389	18·0
1932–33	432*	17·6	..	1,744*	638	..

* Figures ending 31st December 1932.

3. **Woollen Mills.**—The condition of the woollen industry though unsatisfactory showed signs of very slight improvement during the year under review. The two mills which were working during the last year continued to work during the year 1932. There was an increase of about 6 per cent. in the quantity of woollen goods produced in these mills and of about 35 per cent. in the value of the same, when compared with the figures for the last year. In the year 1931 the woollen mills showed a total production of 1,754,352 lbs. valued at Rs. 22,11,250 whereas in the year 1932 the total production was 1,857,835 lbs. valued at Rs. 30,06,810.

Imports of woollens in Bombay and Karachi amounted to Rs. 74·91 lakhs in 1930–31, Rs. 56·38 lakhs in 1931–32 and Rs. 152·60 lakhs up to the end of February 1933. The imports have increased by more than 100 per cent. when compared with the figures of imports for the preceding two years. Apart from this, Bombay has also imported woollen goods from Cawnpore and other important woollen manufacturing centres in India.

Bombay woollen mills supply a very small quantity of the Presidency's requirements. Although there was a small increase in the local production, the Woollen Industry in the Bombay Presidency is not in a satisfactory position.

4. **Hosiery Industry.**—The general economic depression together with very keen competition from imported hosiery has affected the cotton mills equipped with Hosiery Knitting Machines as well as the small hosiery factories in this Presidency.

Both the production and value of the same have been reduced. During 1930–31 production was approximately 480,000 lbs. valued at Rs. 13·08 lakhs. In 1931–32 it was 447,213 lbs. valued at Rs. 12·04 lakhs.

The imports of woollen and cotton hosiery during 1930–31 were valued at Rs. 21 lakhs. The imports for 1931–32 were valued at Rs. 20·5 lakhs; although the value of import was lower in 1931–32 yet the quantity of hosiery increased considerably. The reason for this is the fall in prices of imported goods due to various factors.

During the year various firms and parties were supplied with information and estimates on hosiery manufacture. As a result of this, two hosiery knitting factories have been established in Sind and the starting of another factory is under consideration.

This Department also took up the question of manufacture of suitable quality of cotton knitting yarn with the Bombay Millowners' Association and several mills have expressed their willingness to supply such yarn for knitting cotton hosiery. They sent samples of yarn to the Department for the information of inquirers. The names of these mills were brought to the notice of the various hosiery factories in the Presidency.

Although the economic depression and heavy imports of hosiery form a retarding factor to the development of the industry it is evident from the import figures that there is a good scope for further development of the industry in the Presidency.

5. **Gas Mantles.**—Three more factories were started during the year for the manufacture of gas mantles. This makes a total of five gas mantle factories in the Presidency. On the whole the factories have done well during the year. The difficulty of obtaining chemicals is still there. The manufacturers get their supplies with great difficulty at a very high cost. Imports of gas mantles during the year increased by almost 100 per cent. This is mainly due to the increased use of Petromax lamps in the Presidency.

6. **Chemical Industries.**—Chemical industries except heavy chemical industry in the Presidency did fairly well during the year. The soap factories worked at full capacity. The production of pharmaceutical products increased during the year. Some new pharmaceutical preparations manufacturing concerns came into existence. The production of toilet goods such as cold creams, snows, hair oils, perfumes is reported to have increased during the year. The production of tooth pastes, shaving creams, etc., increased considerably.

It was mentioned in the last year's report that there were three heavy chemical manufacturing concerns in the Presidency. One more started working during the year making a total of four in the Presidency. Out of these, one manufactures only one commodity, viz. Magnesium Chloride. This concern is reported to have done fairly well during the year and due to the extension of protection up to 31st March 1939 the prospects for this concern are good. The three factories manufacturing heavy chemicals worked at a loss during the year. There was some move on the part of the two big firms in Bombay to come to some trade agreement about the rates etc. It is reported, however, that the negotiations have fallen through.

Paint industry in the Presidency showed indications of improvement. A well-known British firm has bought the interests of one of the biggest paints and varnish works in Bombay and is erecting a modern up-to-date plant for the production of these products.

7. **Sugar Industry.**—In this Presidency there is at present only one large scale sugar factory. This factory produced 7,074 tons of white sugar during the season of 1932. Its sales also increased in value from Rs. 23·27 lakhs in the last year to Rs. 27·41 lakhs in the year under report. The factory declared a dividend of 12 per cent. during the year under review. It is understood that some five small sugar factories were also working on bel or pan system during the year in this Presidency.

In 1931–32 the net imports of sugar into Bombay and Karachi were 242,247 tons valued at Rs. 2·58 crores whereas in 1932–33 the same were 201,407 tons valued at Rs. 2·08 crores. There is thus considerable scope for the expansion of this industry in the Presidency.

Since protection was granted to the Sugar Industry last year it is reported that no less than about 100 new sugar factories have either actually come into existence or machinery for same is on order. Practically all these factories, with the possible exception of two or three, will be situated in areas other than the Bombay Presidency. The Deccan Canals Area is considered suitable for the growing of satisfactory qualities of cane. The demand for sugar in this Presidency is available. It is, therefore, regretted that more factories have not come into existence in this Presidency. Government had during the year under their consideration measures which should be adopted to encourage the establishment of more sugar factories in the Presidency and it is hoped that as a result some new factories will come into existence at an early date.

8. **Match Industry.**—During the year under report two match factories were closed but two new factories were opened; thus the number of match factories in the British Districts of the Bombay Presidency remained the same. Two factories were also working in Indian States, making a total of 15 factories in the whole of the Bombay Presidency. The total number of persons employed during the year in the 13 match factories in the British Districts was 5,100. Imports of matches during the year amounted to 25,790 gross match boxes valued at Rs. 17,194.

It is reported that during the year under review match factories with the exception of the " Wimco " did not fare well owing to keen internal competition.

9. **Paper Industry.**—No new companies were registered during the year under report. The paid-up capital of the paper mills remained the same, viz. Rs. 9·24 lakhs. One paper mill situated in Bombay which was reported to have been closed down for want of work from March 1931 started working during the year. This and the two other paper mills, one in Bombay and the other in Poona, worked throughout the year under report.

The production of paper increased from 2,690 tons valued at Rs. 10·23 lakhs in the year 1931 to 3,047 tons valued at Rs. 11·04 lakhs in 1932, or an increase by about 13·27 per cent.

The Managing Director of the Poona mill consulted the Department in connection with their scheme to electrify their paper mill at Poona.

10. **Glass Industry.**—There is only one registered establishment in the Bombay Presidency with a paid-up capital of about Rs. 4·84 lakhs. Besides this company there are three unregistered concerns. No new companies were registered during the year under report.

The factory for the manufacture of false pearls and glass beads which was started a little time back, a reference to which was made in paragraph 22 of last year's report, was closed down owing to competition of Japanese goods.

It was stated in the last year's report that the question of protection to the Indian Glass Industry was referred by the Government of India to the Tariff Board for enquiry and that this Department recommended to the Tariff Board protection for the industry. The report of the Tariff Board has not yet been published. The future of the industry is, therefore, uncertain till the recommendations of the Board and the Government of India's orders on them are known.

11. **Oil Mills.**—At the end of the year 1932–33 there were 11 mills with paid-up capital of Rs. 56·95 lakhs.

Besides the registered oil mills referred to above there were in 1932–33, 37 mills coming under the Indian Factories Act and 76 mills not coming under the Indian Factories Act but run by mechanical power.

It is reported that the industry on the whole did not do well during the year.

12. **Vegetable Ghee.**—The two factories mentioned in the last year's report are reported to have done well. The imports of vegetable ghee during the year were 1,800 tons valued at Rs. 13·45 lakhs and 935 tons valued at Rs. 7·32 lakhs for India and Bombay respectively as against 5,842·45 tons valued at Rs. 42·45 lakhs and 2,900·35 tons valued at Rs. 20·52 lakhs for the year 1931–32. This shows that there has been considerable decrease in the imports of vegetable ghee in this country as well as in the Presidency. The statement made in the last year's report that there is very little room for the further development of this industry at present is confirmed by these figures.

13. **Soap Industry.**—No new company was registered during the year under review. Several new unregistered companies have, however, been started in the Presidency. There are more than 40 unregistered companies engaged in the manufacture of soap. The production of soap increased considerably during the year under report. This can be seen from the figures of imports of caustic soda into Bombay which is mostly used by the soap industry—

1931–32	..	.. 2,907 tons.
1932–33	..	.. 3,920 tons.

There has been considerable decrease in the imports of soap. In the year 1931–32 this Presidency imported 7,640 tons of soap valued at Rs. 40·87 lakhs. The corresponding approximate figures for this year are 5,400 tons valued at Rs. 25 lakhs. It is reported that Lever Bros., the well-known firm of international soap makers, are erecting a huge soap plant in Bombay.

Bombay exports nearly 95 per cent. of the total soap exported from this country. Most of the soap goes to Iraq. During the year 1932–33, 700 tons of soap valued at Rs. 2,26,000 were exported from Bombay as against 606 tons valued at Rs. 2,05,000 in the year 1931–32. There is a great scope for the soap export trade and big soap manufacturers of the Presidency should try to develop export market for their products.

14. **Shoe Polishes.**—Due to the 25 per cent. surcharge on import duties several individuals and firms started manufacturing shoe polishes etc. Most of these have failed and only three well-known firms were manufacturing shoe polishes, motor polishes, etc., during the year. They are reported to be doing well.

15. **Engineering Industry.**—During the year 1932–33 three new Engineering Works were registered with a total authorised capital of Rs. 6·10 lakhs ; during the same period one engineering works went into liquidation with a paid-up capital of Rs. 9,00,000.

There are at present 34 registered companies. There are also a number of small proprietary concerns. The total number of all engineering factories is now 147 including General Engineering Works, Electrical Repair Shops, Motor Car Repair Shops, Machine Shops, Foundries and Iron and Steel Works.

The majority of factories do general repair works. There are several small factories which do constructional work in manufacturing spare parts for textile machinery. The engineering shops on the whole had to work under very difficult conditions because of the acute trade conditions prevailing.

16. **Gold Thread Industry.**—This industry has been severely hit by the acute trade depression. This adverse condition was accentuated by heavy fluctuations in the prices of silver and gold. On account of this, gold thread manufacturers only turned out very limited quantities of gold thread. The industry as a whole did badly during the year under review.

17. **Cigarette Industry.**—Although the trade depression has affected the development of the industry, there was an increase in the number of cigarette factories in the Presidency. During 1931–32 there were 11 cigarette factories. In 1932–33 the number increased to 14.

The imports of cigarettes into Bombay have slowly declined as is shown in the following statement :—

	Rs.
1929–30 ..	.. 76 lakhs.
1930–31 ..	.. 50 lakhs.
1931–32 ..	.. 22·74 lakhs.

The acreage under tobacco cultivation in India is now 1,300,000 giving a yield of about 600,000 tons.

It is interesting to note that the cultivation of American Virginia Tobacco is now being carried out by the Department of Agriculture in the Bombay Presidency. Samples of the tobacco leaves successfully grown were tested by this Department with the co-operation of a local cigarette factory which reported favourably upon the samples. Further experiments are being carefully watched and it is hoped that the Bombay Presidency will be able to supply a suitable tobacco leaf for making cigarettes.

The industry on the whole progressed satisfactorily during the year. There is a good scope for the further development of this industry in the Bombay Presidency.

18. **Carbon papers, type-writer ribbons and stamping pads.**—In the last year's report it was mentioned that a factory had been started in Karachi for the manufacture of these products. It is reported that the products of this factory are getting popular in the country and are in good demand.

19. **Aluminium Industry.**—The Aluminium Industry in the Bombay Presidency has been passing through very difficult times. Both manufacture and sales have been considerably affected due to various factors. The majority of these factories have now turned to making yellow metal hollow ware on account of the cheaper prices of yellow metal sheets and circles.

NEW INDUSTRIES

20. During the year under report several new types of factories were started in this Presidency, e.g. one was for the manufacture of non-ferrous alloys, one for the manufacture of Bakelite electric accessories such as push buttons etc. from Bakelite, one for the manufacture of A. C. ceiling fans, one for the manufacture of razor blades, all in Bombay, an optical factory established in Karachi for the manufacture of spectacles, one for the manufacture of porcelain enamel sign boards, enamel-wares etc. in Nasik, two silk factories in Bombay for manufacture of silk fabrics such as crepe-de-chine, georgette etc. and one for manufacture of stationery paper such as press copy books, office files, index files etc. Where possible the factories were visited by an officer of this Department; where this was not possible, particulars regarding production etc. were obtained and the names of the concerns were brought to the notice of the Directors of Industries in the Provinces and other Government Departments and commercial bodies etc. likely to be interested. Some of these factories are reviewed herebelow.

21. **Refining and smelting of Non-ferrous alloys.**—A factory has been recently started in Bombay for refining of type metal, white

metal, copper, brass, bronze etc. and for manufacture of ingots of all sorts of non-ferrous metals. The name of the factory was brought to the notice of the Directors of Industries in other provinces and other consuming Departments. This factory will be able to supply a long felt want of a refining works for non-ferrous alloys.

22. **Bakelite materials.**—Two new factories have been established in the Bombay Island for the manufacture of bakelite electrical fittings such as lamp holders, adaptors, push buttons etc. from bakelite and Crockery and Sanitary ware.

The following statement of imports of Electrical accessories shows the importance of the Industry :—

Year	Value
	Rs.
1930–31	9,45,422
1931–32	7,92,367
1932–33	7,71,012

Two other factories for manufacturing Bakelite accessories in the Bombay Presidency are now under consideration.

23. **A. C. Ceiling fans.**—An engineering firm in Bombay recently took up the manufacture of A. C. Ceiling fans. They at present manufacture only A. C. Ceiling electric fans but propose to manufacture table fans in the near future. The fans turned out by them are satisfactory and the factory has a good scope for development.

24. **Razor blades.**—A factory has been started recently in a suburb of Bombay for the manufacture of razor blades. At present the materials necessary for the manufacture and finishing etc. are imported from Germany but the proprietor is considering the use of raw materials available in India instead of importing them. The razor blades turned out by the factory are of excellent workmanship.

25. **Schoolboy Slates.**—The manufacture of unbreakable schoolboy slates has been started by a Glass works in the Bombay Presidency. A sample of slate which was tested by the Department showed very good wearing surface. The name of the factory has been circulated to different authorities and School Committees.

26. **Silk fabrics.**—Two factories were recently established in Bombay for the manufacture of silk fabrics. These factories manufacture crepe-de-chine and georgette etc. The fabrics turned out have very good finish and compare favourably with similar imported articles. The demand for their products is good and the industry ought to do well.

27. **Manufacture of Pins and needles.**—A factory has been established in Bombay for the manufacture of pins and needles from imported wire. The work turned out is very good and the name of the factory has been brought to the notice of parties in the different provinces,

28. **Neon Advertising Signs.**—A factory has been established in Bombay for making Neon Electrical Sign boards. This is the first of its kind in India and has a good scope for future development.

29. **Wire nails and wood screws.**—Two factories have been established in the Bombay Presidency one at Karachi which manufactures nails and screws and the other at Bombay which manufactures nails. The raw material for drawing the wire to make the nails is imported.

30. **Manufacture of Dry Cells.**—There is a factory in Bombay manufacturing Dry Cells for pocket Batteries on a small scale and there are three other small proprietory firms which are now experimenting on the manufacture of Dry Cells. The Department is co-operating with them and it is hoped that successful results will be obtained.

31. **Fire Works.**—It is interesting to note that several factories have sprung up for the manufacture of fire works such as sparklers etc. There are 3 factories in Bombay which manufacture fire works which were formerly imported mostly from Germany and to a certain extent from Japan.

NEW FLOTATIONS

32. Despite the fact that there was general trade slump, during the year under review many new companies were floated. These were :—Eight Companies for manufacturing sugar with authorised capital of Rs. 88 lakhs, 1 company for cement manufacture with authorised capital of Rs. 35 lakhs, 4 cotton mills with authorised capital of Rs. 29 lakhs, 4 chemical companies with authorised capital of Rs. 11·38 lakhs, 2 cigarettes etc. manufacturing companies with authorised capital of Rs. 10·10 lakhs, 6 cinema companies with authorised capital of Rs. 9·6 lakhs, 2 motor works with authorised capital of Rs. 8 lakhs, 2 oil mills with authorised capital of Rs. 7·5 lakhs, 3 engineering works with authorised capital of Rs. 6·1 lakhs, 3 electric companies with authorised capital of Rs. 5·5 lakhs, 1 company for manufacturing healds and reeds with authorised capital of Rs. 5 lakhs, 1 company for the manufacture of steel equipments and 1 company for the manufacture of gold and silver thread with authorised capital of Rs. 1 lakh each, 1 mining company with authorised capital of Rs. ½ lakh, making a total authorised capital of Rs. 2·18 crores.

During the year 1932 about 105 new concerns started working or were sufficiently extended so as to come under the Indian Factories Act. Important among these were :—2 tin can-making factories, 1 foundry, 1 electric fan factory, 3 oil mills, 5 engineering works, 2 dyeing and bleaching works, 5 weaving factories, 1 vegetable ghee factory, 4 metal ware works, 2 healds and reeds works, 8 leather and washer works, 7 cigarette factories, 1 tricycle works, 2 fire works, 1 tannery, 18 ginning

and pressing factories, 4 gul factories, 5 cotton mills, 1 safe works, 1 match factory, 1 lace factory, 20 rice and flour mills, 1 cotton opening factory, 1 salt works, 1 carbon paper and ribbon factory and 2 hosiery factories.

During the year under review, 2 cotton mills, 1 engineering works, 3 mining companies, 1 flour mill, 2 ginning and pressing companies, 1 cinema company, 2 motor works, 1 record manufacturing company and 1 fruit canning company with total paid up capital of Rs. 38·1 lakhs went into liquidation.

CHAPTER II

WORK OF THE DEPARTMENT—ORGANISED INDUSTRIES

33. In this Chapter a brief description is given of the various activities of the Department in the interest of organised industries.

There are many small scale organised industries in this Presidency, not to speak of cottage industries, which have in use technical processes and appliances capable of considerable improvements which when carried out will enable the factories in question to provide better quality and larger quantities of finished products for the same labour and cost. This kind of work naturally involves a careful study of the industry concerned and a considerable amount of experimental work. Successful endeavours in this direction would enable the industries concerned to compete better with imports and would also increase production in the country. During the year under review work in connection with Gold Thread Industry and Natural Soda was continued.

In a similar manner, there are certain small scale industries which could be established in the province and which at present either do not exist or exist on a restricted scale. In order that such industries may be established, some practical experimental work in connection therewith is necessary. During the year under report the Department completed its work on laboratory scale in connection with Tallow Substitute and Straw-board. Work was also undertaken in connection with Saponin, Thorium Nitrate, manufacture of Peppermint oil and Kachora roots.

PRACTICAL INVESTIGATIONS, EXPERIMENTS AND DEMONSTRATION WORK TO IMPROVE THE QUALITY AND QUANTITY OF PRODUCTS OF EXISTING INDUSTRIES

(*a*) The Real Gold Thread Industry

34. In the concluding part of para. 29 of the Annual Report for 1931–32 it was stated that the Department was engaged on the design and construction of (1) Hand-worked wire draw bench, (2) Wire flattening rolls, and (3) Electrical annealing chamber for silver wire. The machines were designed and Patents for them were applied for and were admitted by the Controller of Patents, Calcutta, during the year under report.

The machines in question were designed by the Industrial Engineer and the Department got them manufactured by local Engineering firms for practical demonstration of their utility. This was done successfully at Surat before the end of the year 1932–33. It is hoped that the demonstration work will be carried out at other centres during the year 1933–34.

The demonstration work was opened at Surat during January 1933 in the locality where there are factories doing the work of silver smelting, wire drawing and wire flattening and was continued up to March 1933. Bulk of the finest silver wire was being imported into Surat from other centres in India and the very small percentage which was being drawn at Surat required to be improved both in lustre and softness to feel. The chief aim of constructing and demonstrating the above machines was to educate the workers at Surat how to alloy silver so as to be able to draw successfully down to the finest gauge required with a view to make it unnecessary to import fine wire from elsewhere.

35. The activities of the demonstration at Surat may be divided under four different heads.

(1) Demonstration of the improved hand driven wire draw bench to individual wire drawers and factory owners. A local wire drawer, who was trained by the Industrial Engineer, gave practical demonstrations of the drawing of wire to the workers who brought their own silver wire. The workers were also instructed in the working of the machine under demonstration.

(2) Demonstration of annealing silver wire from 28 to 50 SWG. by an Electrical Annealing Chamber.—Practical demonstrations were given in this connection. Wire drawn on the hand driven bench as well as that drawn in the factories was annealed successfully.

(3) Demonstration of the improved power driven wire flattening machine.—The wire was brought by the different factory owners and workers and flattened on the machine by them.

(4) Instructions and demonstrations were given by the Industrial Engineer personally to several factories in the improved methods of cleaning of bazar silver, alloying of silver and precautions to be taken during melting and casting of alloyed silver. During these demonstrations the total amount of silver alloyed and melted was 8,500 tolas ; out of this quantity nearly 70 per cent. consisted of lowest grade market silver.

The demonstration work was continued by the Industrial Engineer at Surat for 57 days and was well attended by the manufacturers and workers in the gold thread industry who expressed their satisfaction in the working of the machine etc. As a result of this, three machines were ordered out and constructed during the period of the demonstration.

It is of interest to note that as a result of the last year's demonstration there are now 20 gilding machines of the improved type working at Surat. There are altogether 70 gilding factories in Surat ; nearly 30 per cent have so far adopted the improved machine.

The work of manufacturing the patented machines was entrusted by the Department to a Surat Engineering firm on the basis of payment to Government of a small Royalty for each machine constructed and sold.

36. The attention of the Department is now engaged on designing improved types of other machines which are also required for the manufacture of gold thread. These are—

(1) Lametta winding machine.

(2) Hand winding and twisting machine.

(3) Light type of hand wire drawing for women and boys.

(*b*) Refining of Natural Soda

37. In paragraph 31 of last year's Report it was mentioned that work had been undertaken to find out the most favourable conditions for the separation of the carbonates and bicarbonates from crude natural soda. The work is still in progress and is expected to be finished before the end of the next year.

(*c*) Improvements in Indigenous Soap Industry

38. A demonstration was organised during the year to show to the soap producers at Prantij (1) a method of estimation of soda in crude natural soda, (2) a method of finding out non-fatty impurities in the oils used in soap making, (3) an improved method of preparing caustic lye from natural soda and lime, (4) an improved method of preparing soap, and (5) a method of preparing bar soaps and soap tablets.

One soap frame, one bar cutting machine and one stamping machine prepared by a firm in Bombay according to the design prepared by the Industrial Chemist were taken to Prantij and were demonstrated to the cottage factories there. Three out of a total of five cottage factories have purchased so far soap frames and bar cutting appliances similar to those shown at the demonstration. All the soap makers have bought necessary chemical apparatus for testing samples of crude natural soda and oils.

PRACTICAL INVESTIGATIONS, EXPERIMENTS AND DEMONSTRATIONS FOR POSSIBLE NEW INDUSTRIES

(*a*) Tallow Substitute.

39. Experimental work on the preparation of a substitute for imported animal tallow from vegetable oils for the textile mills was completed during the year. It has been found that it is possible to get a substitute for

imported tallow by hydrogenation of a mixture of vegetable oils in a certain proportion. A detailed report of the work is in preparation and will be published as a bulletin of this Department.

(*b*) Peppermint Oil

40. In paragraph 33 of last year's Report a reference was made to the possibility of developing the manufacture of peppermint oil in the Presidency. A semi-commercial still was manufactured locally for the production of peppermint oil from peppermint plants. The still was taken to Dahanu Road and experiments were carried out by the demonstrator specially engaged for the purpose. Samples of oil obtained were sent to a firm manufacturing confectionery for trial. They reported that the oil could be used for confectionery purposes but it had a peculiar smell. On further investigation it was found that the oil improves in quality as the plant grows mature. The oil was therefore extracted after the plant had flowered and samples were tested and found to be satisfactory for the manufacture of confectionery.

The still was demonstrated at a peppermint plant garden in Dahanu Road as well as at the Betegaon (District Thana) Agricultural Show. At both the places several visitors came and saw the still in actual working and learnt for the first time the method of extracting essential oils from plants and herbs.

(*c*) Straw Boards

41. It was mentioned in the last year's Report that experimental work was being carried out to find out definite conditions of temperature, pressure, alkali concentration etc. for the production of suitable pulp for the manufacture of straw-boards, paste-boards, paper etc. A part of the work was completed and it was found that it was possible to prepare pulp from Bombay rice straw suitable for the manufacture of paper. A detailed report of the work is being written and will be published in due course as a bulletin of this Department.

(*d*) Starch from Jowar

42. The Department investigated the possibilities of the manufacture of starch from local materials. Investigations were carried out on jowar. It was found that it was possible to manufacture starch from jowar grown in this Presidency. A detailed report of the work was published during the year.

(*e*) Saponin

43. Soap nuts (*Sapindus Trifoliatus*) and soap pods (*Acacia Concina*) are produced in large quantities in this Presidency. They are used locally for the purpose of washing silk clothes and for the purpose of hair shampoo.

There is a fairly good demand for the active principle of saponin contained in these two substances. Investigations are under progress to find out a suitable economic process for the extraction of saponin from soap nuts and soap pods.

(*f*) Thorium Nitrate

44. The demand for Thorium Nitrate has been increasing in this Presidency due to the rapid development of gas mantle manufacturing industry. The manufacturers experience great difficulty in obtaining this chemical. This Department has, therefore, undertaken to find out an economical process suitable to local conditions for the preparation of thorium nitrate and cerium nitrate from the Monazite Sand obtained from Travancore. The work is in progress.

(*g*) Alum and Aluminium Sulphate

45. There is a great demand for alum and aluminium sulphate in this Presidency. The demand for the latter is increasing due to the expansion of dyeing and bleaching industry. This Presidency has adequate deposits of bauxite. Investigation has, therefore, been undertaken to find out a suitable process for the preparation of aluminium sulphate and alumina from local bauxite.

(*h*) Strychnine

46. Strychnine is an important drug used all over the world. The main raw material for its production is Nux Vomica. Experimental work has been undertaken to find out a process for the extraction of strychnine which would suit local conditions, from Nux Vomica obtained in this Presidency. The work was in progress during the year and is expected to be finished before the end of the next year.

(*i*) Starch from Kachora

47. A merchant in Karwar brought to the notice of this Department that a tuber called " Kachora " is found in large quantities in the North Kanara and Ratnagiri Districts of this Presidency. It is used to a certain extent for the production of crude starch by local workers. Samples of the tuber in question were obtained from the merchant and preliminary tests made to find out whether it would be possible to extract starch from the tubers which will have some industrial application. The preliminary tests have shown that the starch obtained from these tubers is very soft and has a very smooth feel. Besides, the tubers have a peculiar sweet smell. It is possible to extract the sweet smelling substance also from the tubers. These preliminary tests have shown the necessity of further work on the subject which it is hoped will be undertaken during the coming year.

REPRESENTATIONS TO THE TARIFF BOARD

48. During the year under report the Department submitted notes to the Tariff Board on (*a*) the question of granting protection to the Indian cotton textile industry and (*b*) sericulture industry. The Director also gave oral evidence before the Board in both cases.

PREPARATION OF ESTIMATES

49. During the year under review summaries of the estimates prepared by this Department were supplied in response to several enquiries received in this office. Detailed estimates were also supplied to those who showed genuine interest in the schemes after perusal of the summaries supplied to them.

NEW ESTIMATES

50. **Handloom factory.**—Enquiries are received from time to time in this Department for estimates for the establishment of small handloom factories either run by manual labour or motive power. A detailed estimate for a handloom factory worked by manual labour was, therefore, prepared. Capital investment will be as follows :—

	Rs.
Block capital	500
Working capital for 3 months ..	2,400
	2,900

The above figures are for a factory equipped with 10 fly shuttle looms producing cloth from 30^s to 40^s of yarn.

Another estimate for a factory producing sarees from 40^s to 100^s was also prepared. The factory will be equipped with 10 fly shuttle looms and capital required will be as follows :—

	Rs.
Block capital	500
Working capital for 3 months ..	2,500
	3,000

51. **Electric Lamps.**—Owing to the increased use of electricity for domestic lighting purposes in towns and big cities there is a big demand for electric lamps. The Industrial Engineer investigated the possibilities of the manufacture of electric lamps in this Presidency and prepared estimates containing materials, machinery, expenditure and cost of production. Capital investment is as follows :—

	Rs.
Block capital	83,000
Working capital	87,000
	1,70,000

This factory will be able to produce 780,000 lamps per annum consisting of 60 watts, 40 watts, 25 watts—230 Volts and 125 Volts, gas filled and vacuum lamps.

52. **Small Grinding Mills.**—Two estimates, one for a mill worked by electric power and the other by oil engine, were prepared to suit small capitalists. Capital investment will be as follows :—

	Electric Motor	Oil Engine
	Rs.	Rs.
Block capital	1,050	1,400
Working capital for 3 months	600	600
	1,650	2,000

The capacity of this plant would be 93,600 payilees per annum.

53. **Woollen Hosiery Manufacture.**—There is a fairly good demand for woollen knitted underwear etc. in Sind and the neighbouring provinces. Enquiries were received requesting the Department to supply a detailed estimate for a small woollen knitting factory. The Industrial Engineer prepared the necessary estimates for knitting plain and fancy pull-overs with the assistance of the Director of Industries, Punjab. Capital investment is as under :—

	Rs.
Machinery	16,000
Working capital	30,000
	46,000

54. **Synthetic Resin (Bakelite) Manufacture.**—The demand for Electrical Accessories, Sanitary ware and unbreakable crockery is on the increase. There are large imports into India of these articles. An estimate has accordingly been prepared of the following capital investment :—

	Rs.
Machinery and Building	67,000
Working capital	18,000
	85,000

SOLVING OF PRACTICAL DIFFICULTIES IN THE PROCESSES OF MANUFACTURE AND RENDERING OF TECHNICAL ADVICE

55. Apart from the work of improvements in technical processes in the making of gold thread, peppermint oil and soap etc. to which a reference is made elsewhere, a number of requests for assistance in the solution

of practical difficulties was dealt with. A few of these are briefly summarised hereunder :—

(1) A chemical factory near Bombay wanted advice on their power and furnace plants. The Industrial Engineer visited the factory and gave the necessary advice.

(2) A firm in Bombay was in need of information about melting of copper scrap and drawing of copper wire for manufacturing copper wire used in the manufacture of imitation and half fine gold thread. It was given all the necessary information together with a sketch of the cast iron mould for casting copper bars.

(3) A party in Bombay was experiencing difficulty in printing and varnishing tailoring tapes. He was advised as to how he should print the tapes.

(4) A firm in Surat was experiencing difficulties regarding brilliancy colour and softness of gold thread manufactured by it. All information about this Department's gilding machine together with technical information about its working was supplied.

(5) A detailed test was made of the dry cell batteries manufactured by a party in Junnar and a technical report was supplied to the firm with suggestion to improve its production.

(6) A gentleman from Thana forwarded two samples of "Light Caoutchoucine" manufactured by him and wanted to know the uses to which it was put and also the extent to which it approached the standard Caoutchoucine. The samples were examined and were found to be up to the mark. He was also given all the necessary information about its uses and was told that a guaranteed supply of scrap vulcanised rubber at a fixed low price was necessary to ensure the success of a "Light Caoutchoucine making factory".

(7) A firm in Bombay engaged in experiments to find out a process for the manufacture of Tannic Acid from Myrabolams, sought the advice of this Department as to the lines on which the investigation should be conducted. They were asked to employ a Chemist to work under the directions of the Industrial Chemist of this Department at the Royal Institute of Science. The firm did this and the investigation made was successful. The firm has now put up a small commercial plant for the manufacture of Tannic Acid.

(8) An enquirer from Sind wanted to know a complete process for the purification of indigenous table salt. A sample of salt which he wanted to purify was called for from him. The sample was tested and analysed and a complete process for its purification was supplied.

(9) A firm in Surat experienced difficulties in the matter of sugar coating of tablets, pills, etc. The coating of their tablets came off and

was not uniform. The use of a blower was suggested to them and a diagram illustrating as to where and how to apply the blast of air to dry the sugar was supplied to them.

(10) A firm in Karachi experienced difficulty in the matter of proper lathering of its shaving soap. A sample of their soap was called for, its defects determined and suggestions for ensuring permanent and profuse lather were made. The firm followed the suggestions and forwarded samples again to this office stating that the lather was up to the mark but the soap was soft. A complete note for turning the soap to requisite hardness was supplied.

GENERAL ASSISTANCE TO INDUSTRIES

56. A number of new concerns came into existence during the year. Many of them were visited by a member of the staff of this Department. The concerns were given when required such advice as was necessary. They were also recommended to the several purchasing authorities in the country. In some cases the question of Railway freight, customs duty and cheap raw materials, etc. was taken up on behalf of the factories with the authorities concerned. Two examples of the latter are reviewed below :—

(*a*) Two companies have recently been started, one in Bombay and the other in Ahmedabad, for the manufacture of healds and reeds required in textile industry. In the manufacture of healds and reeds component parts such as reed ribs, reed staples, etc. are used which have to be imported from foreign countries. A special kind of varnish is also to be used which is not made in India. The customs duty on the imported materials is 25 per cent. *ad valorem* whereas finished healds and reeds imported from foreign countries pay a duty of 10 per cent. *ad valorem*. The company situated in Bombay applied to the Customs authorities for charging it at the lower rate of 10 per cent. *ad valorem* duty on the grounds that the materials were component parts required in the manufacture of healds and reeds. As its request was not complied with, the company with similar other manufacturers made a joint representation to the Government of India, Commerce Department, in the matter and also requested this Department to help them. This Department investigated the matter and the case was submitted to the Government of Bombay for favour of moving the Government of India to grant relief sought for by the manufacturers of healds and reeds.

(*b*) This Department was engaged during the year in assisting a recently established factory to obtain raw materials for the manufacture of W. I. split pulleys at reasonably low rates to enable it to compete with imported pulleys.

COMMERCIAL AND INDUSTRIAL INTELLIGENCE

57. This branch of the Department continued to be both popular and useful.

As usual, enquiries from abroad for opening commercial relationships with Indian firms were transferred to the Director-General of Commercial Intelligence and Statistics, Calcutta. Enquiries from Indian firms for opening trade relationships with British firms were transferred to H. M. Trade Commissioner, Bombay.

Enquiries received and dealt with in this office may be divided into the following groups :—

(*a*) Statistical, i.e. asking for figures of imports and exports of raw meterials as well as finished products.

(*b*) Names of dealers in and sources of raw materials.

(*c*) Names of Indian manufacturers of various articles.

(*d*) Enquiries covering standing etc. of firms.

(*e*) Miscellaneous.

In the year 1932–33 under groups (*a*), (*b*), (*c*) and (*e*), 293 enquiries were received and answered as against 262 in 1931–32 and 234 in the year 1930–31. One enquiry which is of special interest was in connection with Surat Gold Thread. A large importing firm of South India which has so far imported French gold thread was put in direct touch with Surat manufacturers. A representative of the firm visited Surat and was personally introduced by the Industrial Engineer to some reliable makers of good quality thread. The representative stated that since this Department started its work in Surat, the quality of thread had improved and his firm was now prepared to push it in South India instead of French thread.

Under group (*d*), 26 enquiries as against 20 in 1931–32 and 6 in 1930–31 were received and dealt with for the supply of information regarding financial standing and particulars of firms, etc. Of these 9 were from the Director-General of Commercial Intelligence and Statistics, Calcutta, 8 from the Stores Purchase Officer, United Provinces, 4 from the Controller of Purchase, Indian Stores Department, Bombay Circle, 1 from H. M. Trade Commissioner, Bombay, 1 from Director of Industries, United Provinces, 2 from Director of Industries, Punjab, and 1 from a party in Assam. In some cases local firms were given letters of reference to enable them to submit their tenders to the purchasing authorities in other provinces.

MINES AND MINERALS

58. The Department collected during the year the necessary statistics from the various District Magistrates and submitted a consolidated return.

to Government covering the Act and Non-Act Mines in the Presidency. The position revealed by statistics was as follows :—

During the year ending 31st December 1932, 4 mining leases for manganese ore and one prospecting license for chromite ore were granted,

The only mineral of importance during the year ending 31st December 1932 under the Non-Act Mines was Fuller's Earth. 21,465 maunds of this earth valued at Rs. 10,452-13-0 were raised from Met Khan Mine in the Hyderabad (Sind) District.

Owing to a big slump in manganese trade, none of the 8 manganese mines in the District worked during the year ending 31st December 1932.

The Department dealt with a number of enquiries received from the public in connection with minerals, places of their occurrence, firms dealing in them, etc. Some references were also received from Government in the Revenue Department in connection with such matters as granting and renewal of mining leases, granting of certificates of approval, etc., and were dealt with.

FISHING INDUSTRY

59. The only grant available under this head was Rs. 500 for Oyster Culture in Sind. This work continued to be in charge of the Collector of Customs, Karachi.

Work of a general character was, however, attended to by this Department.

STATE-AID TO INDUSTRIES

60. During the year under review. no application for state-aid to industries was received. Two applications which were pending for want of adequate information were rejected as the schemes proposed in them were not considered to be commercially practicable.

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CHAPTER III

WORK OF THE DEPARTMENT—COTTAGE INDUSTRIES

61. **Hand Weaving Industry.**—The Department continued its propaganda of helping and advancing the hand weaving industry which is the premier cottage industry of the Presidency by means of its weaving schools and Demonstrations. Similarly Dyers and Calico printers as well as weavers and others were helped in adopting improved and economic methods in dyeing and calico printing through Dyeing Demonstrations.

Two types of weaving schools, viz. weaving schools for *bona-fide* weavers and weaving schools for agriculturists were maintained during the year under report.

62. **Weaving Schools for bona-fide Weavers.**—During the year under review there were 7 weaving schools for *bona-fide* weavers under the control of the Department. All the schools as usual imparted training in hand weaving by modern methods and improved implements. They were conducted at the following places ; the number of Flyshuttle looms introduced by them is mentioned against each.

Division	Place	District	Number of Flyshuttle looms introduced
Southern Division ..	Lakkundi ..	Dharwar ..	13
Central Division ..	Dharangaon ..	East Khandesh ..	109
Do. ..	Bhingar ..	Do. ..	63
Do. ..	Niphad ..	Do. ..	17
Northern Division ..	Abrama ..	Surat ..	2
Sind ..	Hala ..	Hyderabad ..	80
Do. ..	Tatta ..	Karachi ..	*Nil.*

The weaving schools at Lakhundi, Dharangaon, Bhingar, Abrama and Hala were continued there during the year. The weaving school at Nasarpur on its work being over was transferred to Tatta from April 1932. Owing to the conservatism of the local weavers it was not possible to secure their co-operation. Students admitted to the school also showed indifference and apathy and did not attend regularly. As no immediate progress was in sight the school was transferred to Pir-Jo-Goth in the Sukkur District.

In addition to the introduction of looms as shown above the weaving schools in Southern Division and Central Division introduced 8 and 135 dobbies respectively.

63. **Weaving Schools for Agriculturists.**—These are maintained exclusively for agriculturists with a view to train them in hand weaving by improved methods so that they can earn something during their spare-time. During the year under report two such schools were maintained—one in the Southern Division and one in the Northern Division.

(*a*) The weaving school for agriculturists in the Southern Division was conducted at Annigeri in the Dharwar District. Sixteen agriculturists were trained in the school from March 1932 to February 1933. The school introduced 13 flyshuttle looms and 6 dobbies. At the request of local agriculturists the school is continued at Annigeri for a further term from March 1933.

(*b*) The weaving school for agriculturists in the Northern Division was working from January 1932 at Nikora in the Broach District with 9 pupils. It completed its work in June 1932 and a fresh batch of

students was taken up from July 1932 which finished its course in December 1932. The school is continued for a further term from January 1933.

The students who attended the school during the year were taught weaving of Khadi, Coating, Towels, Athar, Chaddar, Dusters, etc. During the year under review the school introduced 9 flyshuttle looms.

Both the abovementioned schools are equipped with a cottage Sizing Set designed by this Department with a view to train the students in the preparatory processes of warping and sizing by improved methods.

64. **Weaving Demonstrations.**—In addition to the weaving schools mentioned above the Department also maintained 11 Cotton Weaving Demonstrations during the year under review. They were held at the following places and they introduced the number of flyshuttle looms mentioned against each :—

Division	Place	District	Number of Flyshuttle looms introduced
Southern Division	Karajgi ..	Dharwar ..	2
Do. do.	Agadi ..	Do. ..	8
Do. do.	Borgaon ..	Belgaum ..	28
Do. do.	Sankeshwar ..	Do. ..	....
Do. do.	Girisagar ..	Bijapur ..	21
Central Division	Angar ..	Sholapur ..	22
Do. do.	Bamnod ..	East Khandesh ..	19
Northern Division	Broach ..	Broach ..	9
Do. do.	Guttal ..	Kaira ..	3
Do. do.	Lambhvel ..	Do. ..	3
Do. do.	Bhaner ..	Do.	3
Do. do.	Kathlal ..	Do. ..	5
Sind	Shikapur ..	Sukkur ..	14
Do.	Lakhi ..	Do. ..	41

65. **Cottage Sizing Set Demonstration.**—Four weaving schools have been equipped with a Cottage Sizing Set each to train the students on the machine in the preparatory processes of warping and sizing by modern methods.

A separate demonstration equipped with a sizing set and a flyshuttle loom was also maintained in the charge of one Head Master and one Assistant Master. This demonstration worked at Ahmednagar, Sangamner, Gokak and Poona.

As a result of its activities the Demonstration introduced at Sangamner two machines and 2 pit flyshuttle looms. It also trained 5 non-weavers in hand weaving with its allied processes.

From Sangamner the Demonstration was transferred to Gokak in January 1933. The staff was then deputed to participate in the Poona

Industrial Exhibition during February and March 1933 where the Demonstration of the Cottage Sizing Set and carpet weaving by the staff aroused considerable interest amongst the visitors.

66. **Wool Weaving Demonstration.**—This Demonstration is conducted to train wool weavers, i.e. Kurubars, Sangars and Dhangars in the improved methods of Kambli weaving.

The Demonstration worked at Vannur in the Belgaum District from February to November 1932. It introduced 4 looms, three improved spinning wheels and three bows for carding.

The Demonstration took part in the Village Improvement and Cattle Show held at Pandharpur in November 1932. Its work was highly commended and on a request of the local Dhangars supported by the local officers the Demonstration was opened at Pandharpur on the 17th December 1932 where it is still working successfully. A number of men and women attended the Demonstration. The institution is making note worthy progress. The Collector of Sholapur when he visited it on the 18th March 1933 remarked as follows :—

> " I am very glad to pay a visit to the School this morning. It has been opened at Pandharpur for the last four months and at present there are eight pupils. They seem to have made a wonderful progress and have turned out some most attractive blankets. But they are all from Pandharpur town boys and if the school is to develop its full usefulness it ought to attract boys from villages. Nateputa and Temburni are well known for weaving blankets and if some provision for small scholarships (say Rs. 5 per month) could be made, boys from these and other villages would gladly come. An improved Charka is also being introduced and several have been supplied to women in Pandharpur."

The Demonstration has so far introduced at Pandharpur six looms, five spinning wheels and three carding bows. Visitors from other places adopted 3 improved looms and 6 spinning wheels.

The question of converting this Demonstration into a regular weaving school on the lines of cotton weaving schools for *bona fide* weavers with the award of scholarships and prizes is under consideration.

67. **Dyeing Demonstrations.**—Two dyeing demonstrations were maintained during the year under report one in the Presidency proper and one in Sind.

(*a*) The Dyeing Demonstration which was opened in Ranibennur in March 1932 worked during the year at Ranibennur, Pandharpur and Poona. Ranibennur is one of the most important cotton dyeing and weaving centres in the Karnatak. Every effort was made here to find out the causes of defects in the work done locally. The water used was found to be hard and hence unsuitable for dyeing. Processes of softening same were first introduced. Dyeing by Napthol and Sulphur

colours was then introduced showing the use of modern colours and improved methods. Dissolving of colours, additions of other ingredients, washing and drying of dyed materials, etc. were fully explained to the visitors to the Demonstration as well as individual dye-house owners who all adopted same. The Demonstration also taught Calico printing and Mica printing in which 10 and 6 persons respectively were trained. In addition to the local people about 17 persons attended the institution at Ranibennur from places like Tummin Katti, Harihar, Hubli, Gadag, Amashi, etc.

The Demonstration then participated in the Village Improvement and Cattle Show at Pandharpur. Eight persons received training at the Demonstration at Pandharpur. They were from different places like Bagalkot, Usmanabad, Sholapur, Pandharpur, etc.

The Demonstration was then transferred to Gokak from where it was brought to Poona for participating in the Industrial Exhibition in both of which places it did very useful work. In Poona some 34 persons received training in dyeing, 6 in metal and calico printing.

The Demonstration on the whole did very useful work and trained in all some 84 persons during the year.

(*b*) The Dyeing Demonstration in Sind was working in Hyderabad in the beginning of the year where it was transferred from February 1932.

In addition to local weavers and dyers some local institutions of social uplift like the Seva Sadan, Nari Shala, etc. became interested in the work of the Demonstration. Instructions were imparted to all attending the institution in Spray printing, Bleaching and Dyeing yarns and cloths—cotton, woollen and silk. Aerograph printing was the chief feature at Hyderabad and stencilling on copper and zinc sheets was demonstrated in full by modern machinery as a factor essential to economise spray work on cloth. In December 1932 the Demonstration was transferred to Husri a village in Hyderabad District where there are about 500 dyers. Training was given in dyeing with Indanthrene, Sulphur, Naphthol and Diazo colours on a semi-large scale. Turkey Red dyeing was the chief feature at this place which was demonstrated to the entire satisfaction of the local dyers. Several people from Tatta, Matali, Tando-Allahyar, Nasarpur, etc. also attended the Demonstration. As a result of this, a big Turkey Red Dye House was opened by Bhai Kodumal Dharamdas, a leading dyer of Hoosri, under the supervision and guidance of the Dyeing Demonstrator. One man from Kotri having learnt the use of indigo by the hydro-sulphate process started his own work on improved lines with success. Aerograph printing introduced in March 1933 aroused considerable interest amongst the local dyers and printers from the beginning. This Demonstration also did very useful work in Sind during the year.

Both the Dyeing Demonstrators in addition to their practical demonstration work attended to a number of written enquiries received from various persons seeking advice on technical points.

68. **Government Hand Weaving Institute, Poona.**—There were 30 students on the roll in the beginning of the year of which 28 appeared in the Annual Examination for 1931–32 held in April 1932. Technically qualified men from outside were appointed examiners. 21 students passed in the Examination.

Remarks of the Examiners on the work of the candidates showed that the Institute had done very good work during the year under report.

The past students are according to their own reports doing well.

69. **Improvements in Hand Weaving appliances.**—The Department continued during the year its work in connection with making improvements in hand weaving appliances with a view to enable the weaver to produce marketable articles with labour saving appliances.

(*a*) The Beam System to which a detailed reference was made in the Annual Report of this Department for 1929–30 under paragraph 27 is growing more and more popular. During the year under report 24 beams were introduced at Dharangaon, 4 at Bamnod and 3 at Annigeri.

(*b*) The mechanical dobby to which a detailed reference was made in the Annual Report of this Department for 1931–32 on page 34 under paragraph 65 is growing popular amongst the weavers, especially hand loom factory owners. As a result of its demonstration at Dharangaon during the year under review 3 such dobbies were adopted by handloom factories at Dharangaon and 2 were introduced each at Dhulia and Malegaon. The working men's Institute at Ambernath set up one dobby in their weaving class.

With a view to popularise this dobby in other Districts also the Hand Weaving Institute at Poona, weaving schools at Bhingar and Annigeri and the Cottage Sizing Set Demonstration of this Department are also each equipped with one such dobby.

(*c*) During the year under report experiments were in progress for the designing of a suitable cheap loom for the manufacture of up-to-date Sari Borders which are now largely imported.

70. **Miscellaneous activities of the Weaving Section.**—In addition to running weaving schools and Demonstrations the weaving staff rendered assistance to the public in solving their technical difficulties in hand weaving and allied industries. The staff also helped in the establishment of weaving classes by other bodies. Two examples of the latter work are noted below.

(*a*) The President of the Bombay Presidency Women's Council approached this Department to help her in organising a small hand weaving class at the Rescue Home, Umarkhadi, Bombay. The Senior

Weaving Assistant selected a competent past student of a weaving school of this Department and supplied necessary looms, accessories, etc. to the Home and organised a weaving class for the Council.

(*b*) The Working Men's Institute, Ambernath, District Thana, met several difficulties in connection with their weaving class. The Institute was given technical advice and assistance personally by the Senior Weaving Assistant.

A number of persons were supplied by the weaving staff detailed estimates for small hand weaving factories and Dye houses, etc.

INVESTIGATIONS COVERING COTTAGE INDUSTRIES

71. **Investigation into the condition of Hand Weavers.**—The investigation in connection with Hand Weaving Industry detailed on pages 40–41 of last year's report was carried on further during the year under report in the following centres :—

Northern Division ..	.. Chikhli, Abrama, Surat and Broach.
Southern Division ..	.. Belgaum, Gadag, Hubli, Dharwar, Lakkundi, and Gajendragad.
Central Division ..	.. Dharangaon, Bhingar, Sholapur, Malegaon, Parola, Nasik, Satana, Kharda, Chandor and Dhulia.
Sind	.. Nasarpur, Tatta, Lakhi and Hala.

It was reported previously that the reduction in the wages observed was chiefly due to the fact that the agriculturists who were the hand weavers' best customers did not buy as they did in normal years owing to the fall in commodity prices as well as to the continued severe competition from the mills. Last year it was mentioned that there was a further drop in the wages of the weavers practically everywhere and the weavers were not able to earn even the reduced wages. This year it was found that the wages of the weavers in most centres remained the same as last year. In a very few centres however where the industry is organised there was from 10 to 15 per cent. increase in the wages. In general the weavers during this year, therefore, obtained 14 to 50 per cent. less wages as compared with those of 1927. Thus the economic condition of the weavers continued to be poor. The Department is doing its best to train suitable men who may organise the handloom weaving industry on factory basis. The Central Hand Weaving Institute, Poona, a mention of which is made elsewhere in this report continued to do useful work in this direction. The Department also continued to help the weavers in adopting improved appliances and labour saving devices.

72. **Glass Bangle making as a cottage industry.**—A reference was made in the concluding portion of paragraph 70 of the Annual Report of this Department for the year 1931–32 that this Department considered the best means of encouraging the glass bangle industry on cottage basis

which is at present carried on in a number of villages in this Presidency. It was also stated that negotiations were in progress with a Glass Works in this Presidency to carry out experimental work in connection with the proper composition of glass specially suited for bangle making in villages, suitable type of furnaces, rolling machine and fusing appliances, etc. These negotiations have much advanced. Sketches of the machines, etc., proposed to be demonstrated have been received and are now under examination by this Department.

CHAPTER IV

TECHNICAL AND INDUSTRIAL EDUCATION

73. The method of control of Technical and Industrial Education by this Department as described in the last year's report remained unaltered.

There were during the year in the Presidency 7 Government aided institutions maintained by public bodies, 21 Government aided private institutions, 14 Municipal and other institutions not in receipt of a grant but recognised by the Department of Industries and 2 Government institutions. The last 2 were administered and controlled directly by the Department of Industries. The rest were administered by the bodies which maintain them. The Department maintained its touch with these institutions through the agency of the Committee of Direction for Technical Education. A complete list is given in Appendix I at the end of the report.

THE COMMITTEE OF DIRECTION FOR TECHNICAL EDUCATION

74. During the year under report the Committee of Direction for Technical Education comprised of the same gentlemen as last year.

75. **Inspection.**—The teaching Inspector of the Committee as usual visited the various aided and recognised schools during the year in discharge of his duties. The secretary of the Committee also visited some of the schools and inspected their methods of working, accounts, attendance registers and general management. I myself also visited 5 schools during the course of my tours in the Presidency.

76. **Instruction.**—During the year under report all the schools continued to teach the subjects taught in the previous year with practically no change.

Carpentry, Carpentry Drawing and wood-work technology were taught in almost all the schools.

Mechanical Engineering taught at the R. C. Technical Institute, Ahmedabad, F. S. Parekh Technical Institute, Surat, and King Edward VII Technical School, Dhulia, was of a fairly advanced character while that at the School of Industry, Ratnagiri, was of an elementary nature.

Classes in II Class Wiremen's work were continued at Sukkur, Surat, Poona, Ahmednagar, Dhulia and Pandharpur.

Handloom weaving was taught in the schools at Anand, Bordi, Bombay, Ahmednagar, Alibag, Ratnagiri, Dhulia and Sholapur. At the R. C. Technical Institute, Ahmedabad, higher grade courses in spinning and weaving each of 3 years' duration were continued.

The R. C. Press School, Anand, closed its Typography class as they had not sufficient work to warrant the continuation of same. The tailoring class at Matheran closed for want of students.

77. **Examinations.**—The Annual Examinations of all the schools were held by the Committee of Direction for Technical Education and 340 candidates who were successful in the Final Examinations last year were awarded Certificates of Proficiency. No students were sent up for the Annual Examination by the S. L. Panday Industrial School, Matheran, and the Tablidge Talim Anjuman Islam Weaving Class, Pathardi.

78. **Grants-in-aid.**—During the year under review the Department sanctioned grants-in-aid to various Technical and Industrial schools amounting to Rs. 40,810 as shown in Appendix I on the recommendation of the Committee of Direction for Technical Education.

In addition to the above grant-in-aid non-recurring equipment grants amounting to Rs. 776 were made to three schools.

No grant-in-aid was sanctioned to the Nadiad Industrial Institute as it remained closed during the year 1931–32.

79. **Recognition of schools.**—No new institutions were recognised during the year under report. The recognition granted to the Anath Vidyarthi Griha, Ahmednagar, and the Mechanical Engineering School, Nasik, had to be withdrawn during the year as these institutions failed to comply with the requirements of the Committee. No grant-in-aid was made to these institutions.

80. **Expenditure.**—A grant-in-aid of Rs. 14,764–9–6 was made to the Committee of Direction for Technical Education to meet its expenditure during the year under report on different heads as shown below :—

	Rs.	a.	p.
(1) Establishment charges ..	3,387	0	0
(2) Inspection charges	3,382	2	8
(3) Examination charges	7,995	6	10
Total ..	14,764	9	6

VICTORIA JUBILEE TECHNICAL INSTITUTE, BOMBAY

81. This is the premier Technical Institute in the Presidency and is in a class by itself. The standard and courses of instruction were the same as described in the last year's report. The Institute continued to be

managed by a Board of Trustees of which the Chairman and 7 members including the Director of Industries are nominated by Government.

82. **Instruction.**—Regular courses of instruction covering a period of 4 years are given in (*a*) Mechanical Engineering, (*b*) Electrical Engineering, (*c*) Textile Manufacture, (*d*) Technical and Applied Chemistry and (*e*) Sanitary Engineering and Plumbing.

Candidates from different parts of India apply for admission and it has been observed that there is a consistently increasing demand for admission to the Electrical Engineering Course. At the entrance examination for admission in June 1932, some 488 candidates applied for admission ; of these 428 actually appeared in the examination and 153 out of them were admitted of whom 48 were from provinces other than this Presidency.

The results of the Annual Examination of the Institute were satisfactory. 36 out of 36 passed in Mechanical Engineering, 50 out of 55 in Electrical Engineering, 22 out of 23 in Textile Manufacture, 4 out of 4 in Technical and Applied Chemistry, and 10 out of 11 in Sanitary Engineering.

Eighty-four students of the Victoria Jubilee Technical Institute also appeared in the local Examinations of the City and Guilds of London Institute out of which 61 were successful which showed a marked improvement in the percentage of passes when compared with the result of the preceding year, viz. 37 successful out of 76.

83. **Miscellaneous Classes.**—In addition to the regular courses mentioned above apprentice classes as usual were held once a week in Elementary Mechanical and Electrical Engineering, Cotton Spinning and Weaving, and Electrical Wiremen Class I and II corresponding to the syllabus of Government Examination for respective Certificates. All these classes especially those for the Electrical Wiremen continued to attract and were attended by a large number of apprentices engaged in the different industries.

84. **New Textile Workshop.**—As reported last year the new building for the Textile Department was completed a little time back. The machinery taken out from the existing workshop and the new machinery presented to the Institute by Messrs. Platt Bros. & Co. of Oldham were in the course of erection during the year in the new building. This work is expected to be completed at an early date.

85. **Expenditure.**—The total expenditure incurred by the Institute during the year was Rs. 2,43,457 against which a Government grant of Rs. 1,19,000 was made to the Institute by the Department of Industries.

GOVERNMENT TECHNICAL INSTITUTIONS CONTROLLED BY THE DEPARTMENT OF INDUSTRIES

86. There are 2 Technical Institutions in the Bombay Presidency maintained by Government and administered directly by the Department of Industries. These are the R. C. Technical Institute, Ahmedabad and the Technical School, Ahwa.

87. **R. C. Technical Institute.**—While the standard of instruction attained in this institution is lower than that at the V. J. Technical Institute, Bombay, it is higher than that at the other technical schools in the Presidency. Instruction covering a period of 3 years is provided in (1) Cotton Spinning, (2) Cotton Weaving and (3) Mechanical Engineering. During the year under review 219 applications were received for admission to the Institute, 92 candidates actually appeared at the Entrance Examination and 71 were admitted, out of these 19 were admitted to cotton spinning course, 20 to the cotton weaving course and 32 to the Mechanical Engineering Course. The total number of students during the year was 130.

Various scholarships founded by the public were as usual granted to suitable students. In addition to these 6 Government scholarships of Rs. 10 per month each were awarded to deserving students.

The Annual Examination for 1931–32 of all the classes of the Institute was held by the Committee of Direction for Technical Education, Bombay, in April 1932 and out of 132 students who appeared in the Examination 118 passed bringing the result to 89·1 per cent. as against 80·4 and 86·8 in 1930–31 and 1931–32 respectively. In the Final Year Examination 6 out of 7 passed in Cotton Spinning, 3 out of 3 in Weaving and 18 out of 20 in Mechanical Engineering.

Eight students of the Institute also appeared in the City and Guilds of London Institute Examination in the various Grades of different subjects and all passed against 8 out of 14 last year. The results of the Institute for 1931–32 were thus satisfactory. Examinations for 1932–33 were held in April 1933.

The prize distribution and Social Gathering of the Institute was celebrated in December 1932 when Dewan Bahadur Harilal Desai, Ex-Minister of Education, presided.

Messrs. Calico Printing and Manufacturing Co. of Ahmedabad during the year presented to the Institute an old Electrical Generator.

88. **Expenditure.**—The total expenditure incurred during the year was Rs. 30,194. Receipts were Rs. 7,345. Therefore, the net expenditure was Rs. 22,849.

89. **The Government Technical School, Ahwa.**—This School is maintained to train the hill tribes who inhabit the Dangs in various cottage industries with a view to enable them to earn a living rather than to roam about in forests. Attention is also paid to turning out efficient artisans who can fill up suitable posts in building and smithy work in Dangs. Boys attending the Primary School, Ahwa, are also given an opportunity for receiving general training in wood work. These generally are from the backward classes.

Carpentry, Smithy and Mechanical and Free hand drawing are the subjects taught in the School. The pupils are divided into two classes—(*a*) Whole-time and (*b*) part-time. The part-time students attend the school after finishing their work in the primary school.

During the year under report there were 15 students 10 of whom were part-time. Small scholarships in the form of daily wages were granted to students during the year.

The Annual Examination for 1932–33 of all the classes was held on 25th March 1933. 13 students appeared in the Examination of whom 11 passed.

The School is doing useful work in the interest of the aboriginal tribes children.

90. **Expenditure.**—The total expenditure incurred during the year was Rs. 1,811.

SCHOLARSHIPS

91. The Department of Industries annually awards a number of scholarships tenable at the Victoria Jubilee Technical Institute, Bombay, R. C. Technical Institute, Ahmedabad, F. S. Parekh Technical Institute, Surat, Hand Weaving Institute, Poona, and the Technical School, Ahwa. A number of scholarships is also given to the students of the peripatetic weaving schools in the Presidency proper and Sind reviewed in Chapter III.

In addition to the above, ordinarily 3 scholarships are awarded for research in Technical Chemistry and 2 for practical experience in Electrical Engineering.

92. **Scholarships tenable at the Victoria Jubilee Technical Institute, Bombay.**—These scholarships, as mentioned in last year's report, are intended for Intermediate and Backward Hindu and Muhammadan candidates. The total number of scholarships available is 11. During the year under review the Department received 22 applications for consideration of which 18 were from Intermediate Hindus, nil from Backward Class Hindus and 4 from Muhammadans. The awards were made as under :—

Intermediate Classes.—One student in the Electrical Engineering Course, 3 in Textile Manufacture and 1 in Mechanical Engineering received the scholarships for this Class.

Backward Classes.—No applicants represented this group during the year under review.

Muhammadans.—Two students in Texile Manufacture and 1 in Sanitary Engineering were granted scholarships.

93. **Technical Chemistry Scholarships.**—As a measure of retrenchment in expenditure only two scholarships for research work in Technical Chemistry were sanctioned by Government; the third scholarship was held in abeyance. One of the scholars joined the Royal Institute of Science, Bombay, and the other joined the Indian Institute of Science, Bangalore. The work of both the candidates during the year was satisfactory. The scholarship of one candidate which was awarded in the previous year for one year was renewed for one year more.

94. **Scholarships in Electrical Engineering.**—In this branch of training only one scholarship for practical training in Electrical Engineering was awarded during the year under report. The other scholarship was held in abeyance as a measure of retrenchment. The selected candidate joined the G.I.P. Railway Electrical Workshops, and his work during the year was satisfactory.

95. **State Technical Scholarships tenable abroad.**—No new State Technical Scholarship tenable abroad was awarded during the year under report.

A reference was made in paragraph 95 of the Annual Report of this Department for the year 1931-32 regarding the grant of a foreign scholarship to Mr. R. N. Bankapur for the study of Textile Manufacture. This candidate after taking his degree of B.Sc. Tech. in Manchester and spending some time in getting practical training returned to India recently and is reported to have obtained a post in one of the mills in this Presidency.

MISCELLANEOUS WORK

96. **Facilities for practical training etc.**—A number of requests was received from students for advice and help. Suudents who wanted information about technical institutions abroad were referred to the University Information Bureau. Necessary advice about technical courses in India was given in a number of cases.

97. **Industrial and Scientific Research, 1932-33.**—A summary of the progress of scientific and industrial research during 1932-33 was sent to the Government of India for inclusion in the Annual Report of the Committee of the Privy Council for Scientific and Industrial Research, London. Information for the summary was furnished by some of the educational and scientific institutions in this Presidency.

CHAPTER V

WORK OF THE DEPARTMENT—MISCELLANEOUS

98. In the previous chapters the work of the Department in connection with organised industries, cottage industries and Technical and Industrial Education has been dealt with. The Department does

quite an appreciable amount of work which cannot be properly included under any of the above heads, and yet is of sufficient importance to be noted in the Annual Report. Work of this nature is, therefore, referred to in the present chapter.

WORK FOR OTHER DEPARTMENTS OF GOVERNMENT

99. (*a*) The work of carrying out a surprise check of the articles in stock at the Office of the Superintendent, Government Printing and Stationery, Bombay, with the sealed samples has been entrusted to this Department—*vide* Government Resolution, Revenue Department, No. 7662, dated the 30th April 1930. This work was carried out for the second time during the year under review. The articles in stock were checked with the sealed samples received in this office from the Superintendent, Government Printing and Stationery, Bombay, and a detailed report was submitted to Government.

(*b*) The Superintendent, Government Printing and Stationery, Bombay, forwarded to this office from time to time samples of such articles as cloth, ink, gloy, typewriter oil etc. for test and report.

(*c*) The Superintendent, Ahmedabad Prison, requested this Department for information in connection with the manufacture of ordinary washing soap. The object of the enquiry was to introduce this industry in the jail. The Demonstrator in charge of soap demonstration at Prantij was deputed to the jail. He demonstrated the methods of preparing ordinary washing soaps and taught the art of soap making by modern methods to some of the members of the staff of the jail with a view to the introduction of the industry in the jail.

(*d*) At the request of the Director-General of Commercial Intelligence and Statistics, Calcutta, a detailed enquiry was conducted into the Aluminium Hollow-ware Industry of this Presidency. The report was duly submitted to him.

ACTS, LEGISLATIVE MEASURES, ETC.

100. This Department was requested to give its opinion on the following measures :—

(1) Bill to amend the Land Acquisition Act, 1894.
(2) Revision of the Indian Factories Act.
(3) Exemption of salary and wages from attachment.
(4) Besetting an industrial establishment for the purpose of collecting debts to be made a criminal and cognizable offence.
(5) Bill to amend the Indian Railways Act, 1890.

During the year under review, the Bombay Weights and Measures Act of 1932 to fix a scale of standard weights and measures for the Presidency of Bombay was passed by the Bombay Legislative Council. This Department framed the rules under the Act which are under the consideration of Government at present.

MISCELLANEOUS ACTIVITIES OF THE DIRECTOR OF INDUSTRIES

101. During the year under review the Director was a member of the following bodies :—

The Bombay Legislative Council.
The Board of Trustees of the Prince of Wales Museum.
Advisory Committee of the Royal Institute of Science, Bombay.
The Board of Management of the Victoria Jubilee Technical Institute.
The Committee of Direction for Technical Education.
The Bombay Smoke Nuisances Commission.
The Bombay University Senate.
The Bombay University Board of Studies in Engineering.
College of Engineering Sub-Committee to consider the question of Syllabus in Electrical Engineering.

The Director was also a member of the Committee appointed by the Syndicate of the Bombay University for the triennial inspection of the College of Engineering, Poona.

EXHIBITIONS

102. It is the policy of the Department to participate in the Presidency and District Industrial and Agricultural Shows by deputing its Weaving Section Staff with a view to demonstrate improved methods in hand weaving, hand sizing, dyeing and calico printing as may be necessary at a particular Show or Exhibition.

The two principal shows in which the Department participated during the year under review were the Pandharpur Agricultural Show and the All-India Industrial Exhibition, Poona.

The Department also brought to the notice of Commercial bodies and others Exhibitions due to be held in other parts of India and abroad.

LIBRARY

103. A library is attached to the Department of Industries which contains over 3,500 books, publications, directories, etc. The library is being gradually added to so as to increase its usefulness to the Department and the public interested in industries. Some important technical journals are also regularly received in the Department. The library is open for reference to the general public at any time during office hours on working days. It is gratifying to note that members of the public are taking full advantage of this arrangement.

CHAPTER VI

CONCLUSION

STAFF

104. I held charge of the office of Director of Industries for the whole year. Mr. M. E. Haskell held the post of Industrial Engineer for the whole year except for 25 days when he was on leave. Dr. M. S. Pate

continued to work as Industrial Chemist. Mr. B. Tayabali worked as the Principal of the R. C. Technical Institute, Ahmedabad, during the year under report. The other staff of the Department was the same as mentioned in the report for the year 1929–30.

TOURING

105. During the year I was out of my headquarters for 33 days.

The Industrial Engineer was out of headquarters for 57 days and visited Pandharpur, Surat, Ahmedabad and Yeola. His visits to the last three places were in connection with the investigations of improvements in gold and silver thread industry and demonstration of the improved wire drawing and flattening machines.

Similarly, the Industrial Chemist was out of headquarters for 70 days. He visited Malvan, Kankavli, Castle Rock, Ghodgeri, Gokak Road, Hukeri, Arbhavi, Kirloskarwadi, Karad, Poona, Ahmedabad, Prantij, Dahanu Road, Ghogha and Bategaon. His visits to these places were in connection with the investigation of China clay, chrome ore, natural gas, glass bangle industry, vegetable tallow and demonstrations in peppermint oil and soap.

VISITS TO WORKS

106. The Director and the two officers mentioned above visited a number of concerns in connection with the investigations in hand and rendering of technical advice, etc.

EXPENDITURE

107. The expenditure incurred by the Department of Industries during the financial year 1932–33 and the three preceding years was as follows :—

	Rs.
1929–30	1,05,924
1930–31	1,23,715
1931–32	3,67,019
1932–33	3,37,069

The receipts during the year were Rs. 10,679. The total net expenditure of the Department during 1932–33 was, therefore, Rs. 3,26,390.

CONCLUSION

108. Owing to lack of funds no new activity could be undertaken during the year under review.

I am glad to record that the entire staff both technical and clerical worked well and efficiently throughout the year.

P. B. ADVANI,
Director of Industries.

APPENDIX I

RECOGNISED TECHNICAL AND INDUSTRIAL SCHOOLS IN THE BOMBAY PRESIDENCY

	Grant paid in 1932-33	
	Grant-in-aid (Recurring)	Equipment grant (Non-recurring)
	Rs.	Rs.
(1) Schools run by Local Bodies receiving grant-in-aid from the Department of Industries		
1 Municipal Technical School, Jacobabad	1,718	
2 F. S. Parekh Technical Institute, Surat	6,000	
3 V. J. Municipal Technical School, Poona	2,001	352
4 Local Board Industrial School, Satara	1,128	
5 Robertson School of Industry, Pandharpur	792	
6 Edward VII Technical School, Dhulia	4,067	368
7 School of Industry, Ratnagiri	6,915	
(2) Schools managed by private bodies receiving grant-in-aid from the Department of Industries		
8 V. J. Technical Institute, Sukkur	1,793	
9 Nadiad Industrial Institute, Nadiad	..	..
10 Salvation Army Boys Weaving School, Anand	440	..
11 I. P. Mission Industrial School, Borsad	1,120	..
12 Vocational Training School, Ankleshwar	775	56
13 Mahajan Home Industrial School, Surat	650	..
14 A. R. Soonawalla Industrial School, Bordi	763	..
15 C. B. Mission Boys Industrial School, Palghar	451	..
16 Empson Workshops and Technical School, Poona	1,012	..
17 Sir D. M. Petit Industrial School, Sirur	751	..
18 S. P. G. Mission Industrial School, Ahmednagar	1,886	..
19 Sir D. M. Petit Industrial School, Ahmednagar	946	
20 Salvation Army Boys Industrial School, Ahmednagar	579	
21 St. Barnabas' Industrial School, Manmad	1,088	
*22 Mechanical Engineering School, Nasik	..	..
23 K. E. S. Topiwalla Industrial School, Alibag	1,540	..
24 American Mission School for the Blind, Bombay	985	..
25 D. C. Mission Industrial School, Bombay	434	..
26 Textile Technical School, Parel, Bombay	1,146	..
27 S. A. Willingdon Boys' Home, Bombay	950	..
28 D. N. Poor Boys Seminary Industrial School, Bombay	880	..
	40,810	776
(3) Recognised Scools		
(a) Schools managed by Local Bodies not receiving grant-in-aid but recognised by the Department of Industries		
29 Municipal Technical School, Sholapur.		

(b) Schools managed by private bodies not receiving grant-in-aid but recognised by the Department of Industries

*30 Anath Vidyarthi Griha Industrial School, Ahmednagar.

31 Jadhav's College of Tailoring and Cutting, Poona.

32 R. C. Mission Anand Press Industrial School, Anand.

33 American Wesleyan Mission Industrial School, Sanjan.

34 The S. L. Panday Industrial School, Matheran.

35 Tablige Talim Anjuman Islam Weaving Class, Pathardi.

36 Pandharpur Electric Supply Co.'s Wiremen's Class, Pandharpur.

(c) Government Reformatory and Settlement Schools not receiving grant-in-aid from the Department of Industries but recognised by the Department

37 Yeravda Reformatory School, Yeravda.

38 David Sassoon Industrial and Reformatory School, Bombay.

39 Industrial Settlement School, Sholapur.

40 Industrial Settlement School, Bijapur.

41 Industrial Settlement School, Hubli.

42 Industrial Settlement School, Gadag.

(4) Government Technical Schools directly controlled by the Director of Industries, Bombay

43 The R. C. Technical Institute, Ahmedabad.

44 The Government Technical School, Ahwa, Dangs.

* The recognition granted to schools nos. 22 and 30 viz. the Mechanical Engineering School, Nasik, and the Anath Vidyarthi Griha Industrial School, Ahmednagar, was withdrawn during the year.

Annual Report.

Department of Industries — for the year 1932–33.

GOVERNMENT OF BOMBAY.

GENERAL DEPARTMENT.

Resolution No. P. 73.

Bombay Castle, 18th September 1933.

Letter from the Director of Industries, No. I.C. 20/5802, dated the 5th September 1933—Forwarding the final copy of the Annual Report of the Department of Industries for the year 1932–33.

RESOLUTION.—Recorded.

By order of the Government of Bombay
(Transferred Departments),

R. B. EWBANK,

Secretary to Government.

To

The Commissioner in Sind,
The Commissioners of Divisions,
The Commissioner of Excise, Bombay,
The Director of Industries,
The Collector of Bombay,
All other Collectors including the Deputy Commissioner, Upper Sind Frontier,
The Collector of Salt Revenue,
The Collector of Customs and Shipping Master, Karachi,
The Director of Agriculture,
The Registrar, Co-operative Societies,
The Chief Conservator of Forests, Bombay Presidency,
The Conservator of Forests, Northern Circle,
The Conservator of Forests, Central Circle,
The Conservator of Forests, Southern Circle,
The Conservator of Forests, Sind Circle,
The Superintendent, Government Printing and Stationery, Bombay,

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Government of Maharashtra
on 20 July, 2017

The Manager, Government Central Press,
The Accountant General, Bombay,
The Director of Public Instruction,
The Director of Information (with copies of the Report for the Editors' Tables and Editors of Newspapers),
The Compiler, General Administration Report,
The Oriental Translator to Government,
The Private Secretary to His Excellency the Governor,
The Revenue Department,
The Educational Department,
The Public Works Department,
The Finance Department,
The Home Department,
The Chamber of Commerce, Bombay,
The Chamber of Commerce, Karachi,
The Maharashtra Chamber of Commerce, Bombay,
The Indian Merchants' Chamber, Bombay,
The Millowners' Association, Bombay,
The Millowners' Association, Ahmedabad,
The Bombay Piecegoods Merchants' Association, Bombay,
The Bombay Presidency Trades Association,
The Deccan Merchants' Association, Bombay,
The Grain Merchants' Association, Bombay,
The Bombay Underwriters' Association, Bombay,
The Indian Merchants' Association, Karachi,
The Indian Chamber of Commerce in Great Britain, London,
The Karnatak Chamber of Commerce, Bagalkot,
The Government of India.

BOMBAY: PRINTED AT THE GOVERNMENT CENTRAL PRESS.